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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,986	07/06/2004	Eric Jacquinot	2002FR301	1849

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AZ ELECTRONIC MATERIALS USA CORP.  
ATTENTION: INDUSTRIAL PROPERTY DEPT.  
70 MEISTER AVENUE  
SOMERVILLE, NJ 08876

EXAMINER

MORGAN, EILEEN P

ART UNIT

PAPER NUMBER

3723

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/500,986	<b>Applicant(s)</b> JACQUINOT ET AL.	
	<b>Examiner</b> Eileen P. Morgan	<b>Art Unit</b> 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6, 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, what does 'separated, if necessary' mean? Is this a claimed limitation or not? What does 'if applicable' mean? What constitutes if the barrier layer is necessary? If the barrier layer is present and the metal and barrier layer are eliminated, then how can a metal and insulator surface remain? There would be no metal left. Cl.2, the barrier layer is not necessary and is an option.

### **Claim Rejections - 35 USC § 103(a)**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-10, 17-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Cadien-6,375,552 in view of Jacquinet et al.-6043159.

Cadien discloses the claimed polishing composition having colloidal silica with a diameter between 5 and 20 nanometers, 1-10% wt. and a potassium iodate for an oxidizing agent, and a pH between 2 and 4. (See summary of invention and col.6, line 47). The intended use for polishing certain layers of a semiconductor does not further limit the composition. Cadien does not disclose the claimed silica size or that it is not linked by siloxane bonds. However, Jacquinet'159 teaches an abrasive slurry having the claimed pH, wt.% of silica, and having colloidal silica not linked by siloxane bonds of the size between 3-250nm. Therefore, it would have been obvious to one of ordinary skill in the art at time invention was made to provide the composition disclosed by Cadien with the silica taught by Jacquinet, in order to obtain superior results and increase polishing rates compared to other slurries.

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5. Claims 1-6, 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquinot et al.-6043159 in view of Cadien-6,375,552.


Jacquinot discloses a polishing a layers of an integrated circuit with a slurry of colloidal silica not linked by siloxane bonds of the size between 3-250nm, 5-50%wt., with a pH between 2 and 4 (col.3, lines 50-67). Jacquinot does not disclose the slurry being used for a metal layer and insulating layer, or wherein the slurry uses an oxidizing agent. However, Cadien teaches polishing different layers of a semiconductor including a metal layer and insulating layer using a slurry similar to the claimed slurry including potassium iodate for oxidizing agent. Therefore, it would have been obvious to one of ordinary skill in the art at time invention was made to provide Jacquinot with an oxidizing agent and to use the slurry on a multilayer semiconductor, as taught by Cadien, in order to efficiently polish multilayered substrates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eileen P. Morgan whose telephone number is 571.272.4488. The examiner can normally be reached on Monday-Thursday (Office), Friday (Work at home).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571.272.4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EM  
September 30, 2005



EILEEN P. MORGAN  
PRIMARY EXAMINER